 

**MULTIPLE PHD OPPORTUNITIES AT THE HAMILTON INSTITUTE, MAYNOOTH UNIVERSITY, KILDARE, IRELAND**

The Hamilton Institute at Maynooth University are seeking to recruit multiple funded PhD students in the areas of applied mathematics, artificial intelligence, statistics, and machine learning. The Hamilton Institute is dedicated to providing a bridge between mathematics and its applications in ICT, biology and other disciplines. Founded in 2001 with support from Science Foundation Ireland, the Hamilton Institute has been internationally recognized for its work across communication networks, machine learning, mathematical biology and fundamental mathematics.

The ethos of the Institute is the application of mathematics to solve real-world problems. Researchers at the Institute have strong industry links and have worked on national and international projects funded by groups including SFI, the HEA, the EU's Horizon 2020,  and Enterprise Ireland. Other collaborators have included researchers at IBM, CERN and MIT. The Institute continues to tackle complex questions across multiple areas of research and industry with a number of significant successes over the last 15 years.

**PhD 1: Combining machine learning and closed-loop control theory (supervisors Prof Andrew Parnell and Prof Subhra Dey). Closing Date: 30th April 2019.**

The successful student will work with Professor Andrew Parnell and Professor Subhra Dey’s research groups as part of the new SFI I-Form centre on analytics for advanced manufacturing. The student will form part of a research cluster that includes University College Dublin, Trinity College Dublin, Dublin City University, National University of Ireland Galway, and Institute of Technology Sligo. The candidate will work on advanced statistical and machine learning approaches to manufacturing data as part of Platform 3: Advanced Analytics and Engineer Feedback. This will involve taking large data sets of streamed sensor data from manufacturing equipment and developing models that predict machine health and the interaction between the machine operator and the machine tool. Application areas include medical device manufacturing and 3D printing. Many of these application areas have industry partners and the chosen candidate may follow either academic development or industry participation as they see fit.

**PhD 2: Big data privacy (supervisor Prof Vicenc Torra). CLOSED.**

The PhD student will conduct research within the area of data privacy for big data. The successful applicant will work on methods that provide privacy guarantees when big data is used for machine learning and data mining. The student is expected to be excellent in computer science (including programming) and mathematics. This PhD position is funded by Prof. Torra's initial start-up funds. Supervisor’s web page: <http://www.mdai.cat/vtorra/>

**PhD 3: Co-ordinated earth observation, in-situ, and drone data analytics for observing environmental and climatic change (supervisors Prof Andrew Parnell and Dr Gerard McCarthy). CLOSED.**

The candidate will work with Prof Andrew Parnell and Dr Gerard McCarthy’s research group in statistics and machine learning and climate change (respectively), and also as part of the wider group funded by SFI for the ‘Predict’ project involving Dublin City University, University College Cork, and the Geological Survey of Ireland. The research programme will involve analysing in-situ, drone and satellite data for observing various environmental variables in Dublin bay, especially sea level rise. The successful student will  contribute to new statistical methodology in assessing the impact of climate change on Dublin’s coastal region.

**All applicants must have**

* Relevant 2:1 degree (or higher) in Mathematics, Engineering, Physics, Computer Science, Statistics, Machine Learning, Data Science, or similar qualification
* Ability to code in one or more of Matlab, C, R or Python
* Strong linear algebra and calculus skills
* Excellent written and verbal communication and presentation skills in English

The studentships are for 48 months and include a tax free stipend of €18,500 p.a. and the payment of academic fees up to a maximum of €5,500 per annum, as well as a computer and travel allowance.

**Application Procedure:** send a curriculum vitae and a cover letter to hamilton@mu.ie with **PHD X** in the subject line indicating the desired PhD project. Candidates are allowed to express interest in multiple PhD proposals

**Closing Dates:** See above.

**Interview:** Date to be advised. Appointments from: to be advised.